




PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Goguen et al. Examiner: Tsai
Serial No.: 09/641,773 Art Unit: 2857
Filed: August 18, 2000
For: Post Test Data Processing of a Mass Storage System

Commissioner for Patents
Box 1450,
Alexandria, VA 22313-1450

<p style="text-align: center;"><u>CERTIFICATE UNDER 37 C.F.R. § 1.8(a)</u></p> <p>I hereby certify that this correspondence, and any enclosures referenced herein, is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Box 1450, Alexandria, VA 22313-1450 on</p> <p><u>4/21</u>, 2004.</p> <p style="text-align: right;"> Jody Begley</p>
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RESPONSE TO OFFICE ACTION

An Office Action was issued on October 21, 2003, in which the Examiner (1) rejected Claims 1-3 under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,953,689 issued to Hale ("Hale") in view of U.S. Patent No. 6,606,629 issued to DeKoning et al. ("DeKoning"), and (2) rejected Claims 4 and 5 under § 103(a) as being unpatentable over Hale in view of DeKoning and further in view of U.S. Patent No. 4,633,471 issued to Perera et al. ("Perera"). Reconsideration and allowance of the application are requested.

In rejecting Claims 1-3 under §103(a) as being unpatentable over Hale in view of DeKoning, the Examiner states that Hale discloses all of the claim elements except

processing the accumulated data regarding the performance of the mass storage system in response to the host generated commands, the processing comprising validating and correcting, as required, the accumulated data. The Examiner contends, however, that DeKoning teaches this step in Figs. 4, 5, and 10; the Abstract lines 13-19; col. 3, line 21 to col. 4, line 33; col. 6, lines 51-55; col. 20, line 29 to col. 21, line 33; and col. 23, line 17 to col. 25, line 20. The Examiner states that it would have been obvious to modify Hale to include this step in order to detect and correct silent errors arising from inadvertent data path and drive data corruption. These claim rejections are respectfully traversed.

The present application is directed to an improved method for measuring system performance in a mass storage system. The storage system includes a plurality of disk drive storage elements controlled by a disk drive controller. The controller receives commands and data from and returns at least data to a plurality of host computers. The method includes the steps of (a) executing at at least one host computer a test request by sending commands to the mass storage system, (b) accumulating at at least the executing host computer data regarding performance of the mass storage system in response to the requests sent by the host computer, and (c) processing the accumulated data regarding the performance of the mass storage system in response to the host generated commands. The processing comprises validating and correcting, as required, the accumulated data. Validating data as used herein means to check the data for errors. As a non-limiting example described in the specification, validation can feature checking individual data points for errors by applying predetermined decision criteria to the data points. Thereafter, the data can be corrected, as required.

DeKoning discloses data structures containing metadata that are used in a mass storage data integrity assurance techniques. In particular, DeKoning discloses a technique for detecting and correcting data path errors or drive data corruption errors that may inadvertently occur during the transfer of data to or the retrieval of data from a mass storage system. (col. 1, lines 20-27). DeKoning uses sequence number and revision number metadata to detect errors including silent data path and drive data



corruption errors. The metadata are also used to correct detected errors in the data. (col. 24, line 60 to col. 25, line 8).

DeKoning does not in any way relate to measuring system performance of a mass storage system. DeKoning only discloses techniques for detecting and correcting errors in data transfer to and from a mass storage system. Hale is directed to measuring mass storage system performance. The two references are not properly combinable because they have different purposes and there is no suggestion for their combination.

Even if properly combinable with Hale, DeKoning does not cure the deficiencies of Hale. DeKoning fails to teach or suggest at least two steps of the claims. First, DeKoning does not teach or suggest accumulating at least the executing host computer data regarding performance of the mass storage system in response to the requests sent by the host computer. As indicated above, DeKoning is not concerned with performance of a mass storage system, and would have no reason to accumulate any data on performance.

Second, DeKoning does not teach or suggest processing the accumulated data regarding the performance of the mass storage system in response to the host generated commands, the processing comprising validating and correcting, as required, the accumulated data. As DeKoning does not accumulate data regarding performance, it cannot process this data, much less by validating and correcting it.

As noted above, validating data as used herein means to check the data for errors. As a non-limiting example described in the specification, validation can feature checking individual data points for errors by applying predetermined decision criteria to the data points. Thereafter, the data can be corrected, as required. It is unclear whether the Examiner's position is that DeKoning's metadata is "said accumulated data." However, such metadata cannot be the claimed accumulated data because the metadata is not data regarding performance of the mass storage system.

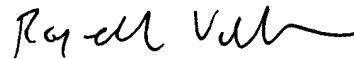


As the Examiner states, Hale also does not disclose processing the accumulated data regarding the performance of the mass storage system in response to the host generated commands, the processing comprising validating and correcting, as required, the accumulated data. Therefore, even assuming that the Examiner's combination of DeKoning and Hale is proper under §103, the combination does not teach (or even suggest) each and every limitation of the claims as required for a rejection under §103.

Claim 1 is therefore allowable over the combination of the Hale and DeKoning references. Claims 2-5 are dependent on Claim 1 and are similarly allowable. The other cited reference, Perrera, does not cure the deficiencies of Hale and DeKoning.

Claims 1-5 are pending in the present application. As the application is now believed to be in condition for allowance, issuance of a Notice of Allowance is respectfully requested.

Respectfully submitted,



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April 21, 2004

Attorney Docket No.: 100157.140



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✓ \$ 2857

PTO/SB/21 (08-03)

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**TRANSMITTAL
FORM**

(to be used for all correspondence after initial filing)

Application Number	09/641,773
Filing Date	08/18/2000
First Named Inventor	Goguen
Art Unit	2857
Examiner Name	Tsai, Carol S W
Attorney Docket Number	100157-140

Total Number of Pages in This Submission

7

ENCLOSURES (Check all that apply)

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Individual name

Rajesh Vallabh

Signature

Date

04/21/2004

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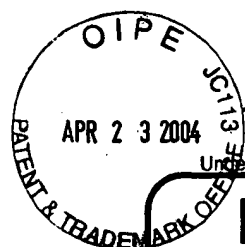
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FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 950.00

Complete if Known

Application Number	09/641,773
Filing Date	08/18/2000
First Named Inventor	Goguen
Examiner Name	Tsai, Carol S W
Art Unit	2857
Attorney Docket No.	100157-140

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:Deposit
Account
Number
Deposit
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08-0219

Hale and Dorr LLP

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 770	2001 385	Utility filing fee	
1002 340	2002 170	Design filing fee	
1003 530	2003 265	Plant filing fee	
1004 770	2004 385	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1)			(\$ 0.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	-20** =	X	
Multiple Dependent	-3** =	X	
	0		0

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	
1202 18	2202 9	Claims in excess of 20	
1201 86	2201 43	Independent claims in excess of 3	
1203 290	2203 145	Multiple dependent claim, if not paid	
1204 86	2204 43	** Reissue independent claims over original patent	
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)			(\$ 0.00

**or number previously paid, if greater, For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Large Entity Small Entity

Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for ex parte reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 420	2252 210	Extension for reply within second month	
1253 950	2253 475	Extension for reply within third month	
1254 1,480	2254 740	Extension for reply within fourth month	
1255 2,010	2255 1,005	Extension for reply within fifth month	
1401 330	2401 165	Notice of Appeal	
1402 330	2402 165	Filing a brief in support of an appeal	
1403 290	2403 145	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,330	2453 665	Petition to revive - unintentional	
1501 1,330	2501 665	Utility issue fee (or reissue)	
1502 480	2502 240	Design issue fee	
1503 640	2503 320	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 770	2809 385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 770	2810 385	For each additional invention to be examined (37 CFR 1.129(b))	
1801 770	2801 385	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 950.00**SUBMITTED BY**

(Complete if applicable)

Name (Print/Type)	Rajesh Vallabh	Registration No. (Attorney/Agent)	35,761	Telephone	617-526-6505
Signature		Date	04/21/2004		

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